

Amendments to the Claims

The following listing of claims replaces all prior versions and listings of claims in the application.

1-10. Cancelled

11. (Currently Amended) An optical network operable to provide one or more optical links therein, the optical network including:

a first node operable to terminate an optical link; and

a second node coupled to the first node and operable to terminate the optical link, the first node operable to initiate provisioning of the optical link between the first node and the second node by transmitting an announce message to the second node, the announce message including a source field containing a first designation used by the first node to identify the optical link identifying the first node, the second node generating an echo message having a second designation identifying used by the second node to identify the optical link written into a source field of the echo message and the first designation identifying the first node being written into an echo field of the echo message, the second node transmitting the echo message to the first node.

12. (Currently Amended) The optical network according to claim 11, wherein the first designation identifying the first node includes a network address of the first node and a facility identifier specifying a port of the first node associated with the optical link, the second designation identifying the second node including a network address of the second node and a facility identifier specifying a port of the second node associated with the optical link.

13. (Currently amended) ~~The An optical network according to claim 11, further comprising: operable to provide one or more optical links therein, the optical network including:~~

~~a first node operable to terminate an optical link;~~

~~a second node coupled to the first node and operable to terminate the optical link, the first node operable to initiate provisioning of the optical link between the first node and the second node by transmitting an announce message to the second node, the announce message including a source field containing a designation identifying the first node, the second node generating an echo message having a designation identifying the second node written into a source field of the echo message and the designation identifying the first node being written into an echo field of the echo message, the second node transmitting the echo message to the first node;~~

~~a first node optical link manager module; and~~

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a second node optical link manager module, creation of the optical link being made in response to invocation of a service object in the optical link module of the first node, a link state of the optical link transitioning from a down state to an initialized state in response to invocation of the service object, the announce message being transmitted from the first node to the second node in response to the link state transitioning to the initialized state.

14. (Original) The optical network according to claim 13, wherein the link state transitions from the initialized state to an up state when the designation in the announce message identifying the first node matches the designation specified in the echo field of the echo message.

15. (Original) The optical network according to claim 13, wherein the service object is a link service object and the link is created by invocation of a create method of the link service object, the link service object executed by the first node optical link manager module.

16. (Currently amended) [[Th]] The optical network according to claim 14, wherein the link state transitions to the down state upon invocation of a delete method of the service object.

17. (Original) The optical network according to claim 14, wherein the link state transitions to the initialized state when the designations in the source field of the announce message do not match the designations in the echo field of the echo message.

18. (Original) The optical network according to claim 11, wherein the first node is an optical transport network node.

19. (Original) The optical network according to claim 11, wherein the second node is an optical transport network node.

20. (New) A method for discovering an adjacent node over an optical communication link in an optical network, comprising:

creating at a host node a first message including a first link identifier used by the host node to identify the communication link;
transmitting the message over the optical communication link;

receiving at the first node a second message sent from an adjacent node containing, the second message containing a second link identifier used by the adjacent node to identify the optical communication link and the first link identifier.

21. (New) The method of claim 20, wherein the first message stores the first link identifier in a predefined field.

22. (New) The method of claim 20, wherein the second message stores the first link identifier in a first predefined field and the second link identifier in a second predefined field.

23. (New) The method of claim 20, wherein the second message includes one or more designations specifying the network resources of the second node responsible for provisioning the communication link.

24. (New) The method of claim 20, wherein the first message includes one or more designations specifying network resources of the first node responsible for provisioning the communication link, and the second message includes one or more designations specifying the network resources of the second node responsible for provisioning the communication link.

25. (New) The method of claim 20, further comprising transitioning a state of the optical communications link at the first node from a first state to a second state if the first link identifier is contained within a predetermined field of the second node in the second message.

26. (New) Software stored for programming a node on an optical network that, when executed by the node, causes the node to perform a process of automatic network topology discovery, the process comprising:

creating at a host node a first message including a first link identifier used by the host node to identify the communication link;

transmitting the message over the optical communication link;

receiving at the first node a second message sent from an adjacent node containing, the second message containing a second link identifier used by the adjacent node to identify the optical communication link and the first link identifier.

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27. (New) The software of claim 26 wherein the first message stores the first link identifier in a predefined field.

28. (New) The software of claim 26 wherein the second message stores the first link identifier in a first predefined field and the second link identifier in a second predefined field.

29. (New) The software of claim 26 wherein the second message includes one or more designations specifying the network resources of the second node responsible for provisioning the communication link.

30. (New) The software of claim 26 wherein the first message includes one or more designations specifying network resources of the first node responsible for provisioning the communication link, and the second message includes one or more designations specifying the network resources of the second node responsible for provisioning the communication link.

31. (New) The software of claim 26 further comprising transitioning a state of the optical communications link at the first node from a first state to a second state if the first link identifier is contained within a predetermined field in the second message.

32. (New) The optical network according to claim 11, further comprising:

a first node optical link manager module; and

a second node optical link manager module; wherein creation of the optical link is made in response to invocation of a service object in the optical link module of the first node, a link state of the optical link transitioning from a down state to an initialized state in response to invocation of the service object, the announce message being transmitted from the first node to the second node in response to the link state transitioning to the initialized state

33. (New) The optical network according to claim 32, wherein the service object is a link service object and the link is created by invocation of a create method of the link service object, the link service object executed by the first node optical link manager module.

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34. (New) The optical network according to claim 32, wherein the link state transitions from the initialized state to an up state when the first designation in the announce message matches a designation specified in a predefined field of the echo message.

35. (New) The optical network according to claim 34, wherein the link state transitions to the down state upon invocation of a delete method of the service object.

36. (New) The optical network according to claim 34, wherein the link state transitions to the initialized state when the first designation contained in the announce message does not match the designation in the echo field of the echo message.